

# United States Patent [19]

Shiokawa et al.

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[54] HETEROCYCLIC COMPOUNDS

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[58] Field of Search 546/278, 280, 256, 275, 546/281; 514/340-341, 342

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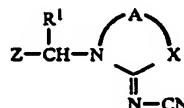
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[57] ABSTRACT

Novel heterocyclic compounds of the formula



(I)

wherein, R¹ represents a hydrogen atom or an alkyl group, A represents an ethylene group which may be substituted by alkyl or a trimethylene group which may be substituted by alkyl, X represents an oxygen or sulfur atom or the group



in which R² represents a hydrogen atom of an optionally substituted alkyl, an alkenyl, an alkynyl or an acyl group, and R³ represents a hydrogen atom or an alkyl group, and Z represents an optionally substituted 5- or 6-membered heterocyclic group which contains at least two hetero atoms selected from oxygen, sulfur and nitrogen atoms, or an optionally substituted 3- or 4-pyridyl group.

The above defined novel heterocyclic compounds of formula (I) exhibit powerful insecticidal properties.

9 Claims, No Drawings